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09/613,952	07/11/2000	Antti Lappetelainen	NC18815	1944

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EXAMINER

D AGOSTA, STEPHEN M

ART UNIT	PAPER NUMBER
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2683

DATE MAILED: 04/14/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/613,952

Applicant(s)

LAPPETELAINEN ET AL.

Examiner

Stephen M. D'Agosta

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 24 March 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 2-5, 7, 9-15 and 17-24 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 2-5, 7, 9-15 and 17-24 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 24 March 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## **DETAILED ACTION**

### ***Response to Arguments***

Applicant's arguments with respect to the amended claims have been considered but are moot in view of the new ground(s) of rejection. A new rejection is provided below.

1. Formal drawings submitted have been approved by the examiner.
2. The applicant has overcome the USC 112 rejections regarding claims 2, 10 and 14.
3. The examiner acknowledges cancellation of claims 1, 8, 16 and new claims 21-24. The examiner notes that claims 8, 10-12, 14-16 and 20 are single reference 103 rejections as pointed out by the applicant (this has been fixed).
4. Claim 7 refers to claim 6 which has been cancelled. **A fix is required.** The examiner has interpreted the claim as referring to claim 5.
5. Claim 17 rejected per rejection used for claims 8 and 9.
6. Claim 9 and 21 still stand rejected based upon Gourgue teaching a broadcast channel for transmit power indications versus the applicant who uses a broadcast beacon for transmit power indication signals. One skilled in the art would provide for both designs.

### ***Response to Amendment***

The amendment filed on 3-24-03 under 37 CFR 1.111 has been considered but is ineffective to overcome the Raissinia reference.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

- (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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**Claims 9-15, 17, 20-24** rejected under 35 U.S.C. 103(a) as being unpatentable over Raissinia US 6,408,165 in view of Kamerman et al. U.S. Patent 6,067,291 and Gourgue U.S. Patent 5,564,075 (hereafter Raissinia, Kamerman and Gourgue).

As per **claims 9, 17 and 22**, Raissinia teaches a multi-user radio system having a network infrastructure with which a first mobile and at least a second mobile communicate data (figure 1), the data forming portions of communication signals transmitted at selected power levels (title – power regulation), an improvement of an assembly for facilitating selection of the power levels at which to transmit signals, said assembly comprising:

A signal generator coupled to the network infrastructure, said signal generator for generating a transmit power indication signal for transmission to at least a selected one of the first mobile and the at least second mobile, the transmit power indication signal of a value representative of a maximum allowable power level permitted of the selected power levels at which to transmit the communication signals (C3, L8-4323 and C5, L54-67 to C6, L1-14).

**but is silent on** wherein the radio system defines beacon intervals within which beacon signals are broadcast and wherein the transmit power indication signal generated by said signal generator is broadcast as part of the beacon signals AND during selected intervals.

With further regard to claim 22, Raissinia is silent on contention/contention-free periods.

Gourgue teaches power control whereby the base transceiver transmits on the broadcast channel a power indication representing transmit power (abstract).

Kamerman discloses wireless LAN with enhanced carrier sense provision (title) that also shows contention windows (figure 1) and infers non-contention windows (as is known in Ethernet systems).

Raissinia teaches that the power control system is based upon the measurement of received data transmissions (C6, L5-7) which tend to occur at irregular intervals. It would be a design choice to modify the invention such that the power indication signal is

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generated during selected intervals (ie. during contention-free periods, during contentious periods, etc.) which is disclosed by Kamerman above.

(Claim 22) The examiner points out that the 802.11 standard, as referenced by the applicant, has both contention-based (eg. DCF) AND contention-free access (eg. PCF) methods. Hence, one skilled in the art would transmit the power indication signal during both the DCF period an/or the PCF period as a design choice since both options are available per the standard (and Kamerman teaches both periods).

It would have been obvious to one skilled in the art at the time of the invention to modify Raissinia, such that a beacon is used wherein transmit power signal is broadcast as part of the beacon signal, to provide means for the beacon signal/channel to be used to send the transmit power signal which more efficiently uses said beacon channel (eg. is used for two operations).

As per **claims 10 and 20**, Raissinia teaches claim 1/17 **but is silent on** wherein radio system defines a ~~distributed coordination function (DCF)~~ contention period and wherein the transmit power indication signal generated by said signal generator is transmitted to all of the first and at least second mobile stations respectively (during the contention period – claim 20).

The examiner points out that the applicant teaches the DCF period is derived from the IEEE 802.11 standard and is a mandatory function that defines a Contention Period (spec. pg. 3, L14-17). Hence one skilled in the art would use said standard as a basis for power control in an 802.11 wireless LAN.

Further to this point, Raissinia teaches a MAC protocol to prevent collisions (C4, L26-29) which suggests an Ethernet-based (wireless) LAN. Hence one skilled in the art would be able to define a DCF period wherein the power indication signal is transmitted to the mobile stations.

It would have been obvious to one skilled in the art at the time of the invention to modify Raissinia, such that a DCF is defined and used to send the transmit power indication signal, to take advantage of this functionality as defined in the 802.11 specification during contention communication periods.

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As per **claim 11**, Raissinia teaches claim 10 **but is silent on** wherein radio system defines a contention period comprises a plurality of definable sub-periods wherein the DCF period forms a portion thereof and wherein the transmit power indication signal generated by said signal generator is generated ~~during the distributed coordination function period~~ at least one of the plurality of definable sub-periods of the contention free period.

The examiner points out that the 802.11 standard, as referenced by the applicant, has contention-based AND contention-free access methods. Hence, one skilled in the art would transmit the power indication signal during the DCF period of the contention free period as a design choice.

Kamerman teaches a contention window/period that has definable sub-periods (eg. slot times) in figure 1).

It would have been obvious to one skilled in the art at the time of the invention to modify Raissinia, such that a DCF is defined and used to send the transmit power indication signal, to take advantage of this functionality as defined in the 802.11 specification during contention communication periods.

As per **claim 12**, Raissinia teaches claim 11 wherein all of the first and second mobile stations transmit signals at power levels substantially corresponding to the maximum allowable power level indicated by the power indication signal (C5, L5-14).

As per **claim 13**, Raissinia teaches claim 11 **but is silent on** wherein radio system defines beacon intervals within which beacon signals are broadcast and where the transmit power indication signal ~~generated is broadcast as part of a beacon signal~~ broadcast as part of the beacon signals is broadcast as a field within a beacon-frame body of the beacon signals.

Gourgue teaches power control whereby the base transceiver transmits on the broadcast channel a power indication representing transmit power (abstract). The broadcast channel is comprised of data frames which reads on the broadcasted beacon having a beacon-frame body.

The examiner takes Official Notice that information is usually transmitted in a framed sequence with fields/data being contained within the frames.

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It would have been obvious to one skilled in the art at the time of the invention to modify Raissinia, such that a beacon is used wherein transmit power signal is broadcast as part of the beacon signal, to provide means for the beacon signal/channel to be used to send the transmit power signal which more efficiently uses said beacon channel (eg. is used for two operations).

As per **claim 14**, Raissinia teaches claim 4 9 **but is silent on** wherein the radio system is operable pursuant to ~~an IEEE 802.11 standard~~ a communications standard that which defines a PCF period and a DCF period a contention-free and contention period and wherein the transmit power indication signal is transmitted in a first manner during PCF the contention-free period and in a second manner during the DCF contention period.

The examiner points out that the 802.11 standard, as referenced by the applicant, has both contention-based (eg. DCF) AND contention-free access (eg. PCF) methods. Hence, one skilled in the art would transmit the power indication signal during both the DCF period an/or the PCF period as a design choice since both options are available per the standard.

Kamerman discloses wireless LAN with enhanced carrier sense provision (title) that also shows contention windows (figure 1) and infers non-contention windows (as is known in Ethernet systems).

It would have been obvious to one skilled in the art at the time of the invention to modify Raissinia, such that DCF or PCF periods are defined and used to send the transmit power indication signal, to take advantage of these capabilities as defined in the 802.11 specification during contention/contention-free communication periods.

As per **claim 15**, Raissinia teaches claim 14 wherein the first manner by which the power indication signal is transmitted comprises transmission to a selected one of the first mobile and at least second mobile station (C5, L44-52 for multiple stations and C6, L5-14 for power control).

As per **claim 21**, Raissinia teaches claim 17, **but is silent on** wherein the transmit power indication signal broadcast as part of the beacon signals is broadcast as a field within a beacon-frame of the beacon signals.

Gourgue teaches power control whereby the base transceiver transmits on the broadcast channel a power indication representing transmit power (abstract). The broadcast channel is comprised of data frames which reads on the broadcasted beacon having a beacon-frame body.

The examiner takes **Official Notice** that information is usually transmitted in a framed sequence with fields/data being contained within the frames.

It would have been obvious to one skilled in the art at the time of the invention to modify Raissinia, such that a beacon is used wherein transmit power signal is broadcast as part of the beacon signal, to provide means for the beacon signal/channel to be used to send the transmit power signal which more efficiently uses said beacon channel (eg. is used for two operations).

As per **claim 23**, Raissinia teaches claim 22 wherein the radio system defines beacon intervals within which beacon signals are broadcast by the network **but is silent on** wherein the transmit power indication signal generated by said signal generator is broadcast as part of the beacon signals.

Kamerman discloses wireless LAN with enhanced carrier sense provision (title) that also shows contention windows (figure 1) and infers non-contention windows (as is known in Ethernet systems).

Raissinia teaches that the power control system is based upon the measurement of received data transmissions (C6, L5-7) which tend to occur at irregular intervals. It would be a design choice to modify the invention such that the power indication signal is generated during selected intervals (ie. during contention-free periods, during contentious periods, etc.) which is disclosed by Kamerman above.

(Claim 22) The examiner points out that the 802.11 standard, as referenced by the applicant, has both contention-based (eg. DCF) AND contention-free access (eg. PCF) methods. Hence, one skilled in the art would transmit the power indication signal



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during both the DCF period an/or the PCF period as a design choice since both options are available per the standard (and Kamerman teaches both periods).

It would have been obvious to one skilled in the art at the time of the invention to modify Raissinia, such that a beacon is used wherein transmit power signal is broadcast as part of the beacon signal, to provide means for the beacon signal/channel to be used to send the transmit power signal which more efficiently uses said beacon channel (eg. is used for two operations).

As per **claim 24**, Raissinia teaches claim 23, **but is silent on** wherein the transmit power indication signal generated by said signal generator and broadcast as part of the beacon signals is transmitted as a field within a beacon-frame body of the beacon signals.

Gourgue teaches power control whereby the base transceiver transmits on the broadcast channel a power indication representing transmit power (abstract). The broadcast channel is comprised of data frames which reads on the broadcasted beacon having a beacon-frame body.

The examiner takes **Official Notice** that information is usually transmitted in a framed sequence with fields/data being contained within the frames.

It would have been obvious to one skilled in the art at the time of the invention to modify Raissinia, such that a beacon is used wherein transmit power signal is broadcast as part of the beacon signal, to provide means for the beacon signal/channel to be used to send the transmit power signal which more efficiently uses said beacon channel (eg. is used for two operations).

**Claims 2-4 and 18-19** rejected under 35 U.S.C. 103(a) as being unpatentable over Raissinia/Kamerman/Gourgue in view of Krishnakumar et al. U.S. Patent 6,014,087 (hereafter referred to as Krishnakumar).

As per **claims 2 and 18**, Raissinia teaches claim 4/17 9/17 **but is silent on** wherein the radio system defines a ~~point coordination function (PCF)~~ contention-free period, and wherein the transmit power indication signal generated by said signal

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generator is transmitted to a single selected one of the first and the at least second ~~selected~~ one of the mobile stations ~~respectively~~.

The examiner points out that the applicant teaches the PCF period is derived from the IEEE 802.11 standard. Hence one skilled in the art would use said standard as a basis for power control in an 802.11 wireless LAN.

Further to this point, Raissinia teaches a MAC protocol to prevent collisions (C4, L26-29) which suggests an Ethernet-based (wireless) LAN. Hence one skilled in the art would be able to define a PCF period wherein the power indication signal is transmitted to the mobile stations.

Krishnakumar makes reference to an 802.11 wireless LAN and the Point Coordination Function (C1, L15-23).

It would have been obvious to one skilled in the art at the time of the invention to modify Raissinia, such that a PCF period is used, to take advantage of this functionality as defined in the 802.11 specification during contention-free communication periods.

As per **claims 3 and 19**, Raissinia teaches claim 2/18 wherein the signal generator generates a power correction information signal for transmission to the mobile stations which contains a value representative of an amount at which the selected one of the mobile stations is to communicate the its signal (C6, L5-8).

As per **claim 4**, Raissinia teaches claim 2 **but is silent on** a contention free period comprises a plurality of definable sub-periods, ~~wherein the PCF forms a portion thereof~~ and wherein the transmit power indication signal generated by said signal generator is generated ~~during the PCF period~~ at least one of the plurality of definable sub-periods of the contention free period.

The examiner points out that the applicant teaches the PCF period is derived from the IEEE 802.11 standard. Hence one skilled in the art would use said standard as a basis for power control in an 802.11 wireless LAN.

Further to this point, Raissinia teaches a MAC protocol to prevent collisions (C4, L26-29) which suggests an Ethernet-based (wireless) LAN. Hence one skilled in the art would be able to define a PCF period wherein the power indication signal is transmitted to the mobile stations.

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Krishnakumar makes reference to an 802.11 wireless LAN and the Point Coordination Function (C1, L15-23).

Kamerman teaches a contention window/period that has definable sub-periods (eg. slot times) in figure 1).

It would have been obvious to one skilled in the art at the time of the invention to modify Raissinia, such that a PCF period is used, to take advantage of this functionality as defined in the 802.11 specification during contention-free communication periods.

**Claims 5 and 7** rejected under 35 U.S.C. 103(a) as being unpatentable over Raissinia/Kamerman/Gourgue in view of Larsson et al. U.S. Patent 5,241,690 (hereafter Larsson).

As per **claim 5**, Raissinia teaches claim 4 **but is silent on** further comprising a mobile station power-level calculator positioned at one of the mobiles, said calculator operable responsive to the value of the transmit power indication signal and to the value of the power correction information signal to calculate a power level at which signals are to be generated.

Gourgue teaches power control whereby the mobile station can calculate/deduce an optimal power transmit value based on the measured broadcast channel (from the Base Station) and an estimated propagation loss [abstract].

Larsson teaches power regulation that provides a signal instructing either a power increase or power decrease (abstract).

It would have been obvious to one skilled in the art at the time of the invention to modify Raissinia, such that the mobile station has a power-level calculator, to provide means for it to determine a power at which to generate signals based upon the original transmit power indication signal and the power correction signal.

As per **claim 7**, Raissinia teaches claim 6 **but is silent on** wherein the radio system defines polling periods during which the network infrastructure polls a selected one of the first mobile stations and at least a second mobile and wherein the power correction information signal is transmitted to the selected one of the first and at least

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the second stations respectively, when the network infrastructure polls the selected one of the mobiles.

The examiner points out that the applicant teaches IEEE 802.11 as having the ability to poll the wireless terminals (page 3, L10-13). Hence one skilled in the art would use this knowledge for polling and power correction information transmittal.

It would have been obvious to one skilled in the art at the time of the invention to modify Raissinia, such that there is a polling period and the power correction signal is transmitted when a mobile is polled, to provide a contention-free capability (eg. via polling) and to simultaneously transmit power information during polling to optimize efficiency of the communications link bandwidth (eg. doing two operations at once).

### **Conclusion**

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Stephen M. D'Agosta whose telephone number is 703-306-5426. The examiner can normally be reached on M-F, 8am to 5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bill Trost can be reached on 703-308-5318. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9314 for regular communications and 703-872-9314 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-306-0377.

SMD  
April 9, 2003

  
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